

What is claimed is:

1. (Currently Amended) In a cable modem termination system (CMTS), a method of changing the provisioning status of a selected cable modem in a cable modem network having a provisioning system, the method comprising:

transmitting a first configuration file to the selected cable modem thereby allowing the selected cable modem to initially provision and perform a self-test;

performing periodic ranging between the selected modem and the CMTS operating in a primary hub of a cable television plant; and

causing a change in provisioning status of the selected cable modem by performing one of:

i) deliberately interrupting the periodic ranging at the MAC/physical layer of the cable modem network by the CMTS receiving a clear modem reset command directly from the provisioning system located at a network management station and the CMTS causing a disruption in the periodic ranging with the selected cable modem, thereby causing the selected cable modem to return to a synchronization process with the cable modem network and causing the selected cable modem to receive a second configuration file; and

ii) transmitting a ranging abort message to the selected cable modem thereby deliberately causing the cable modem to have an RF failure, wherein the RF state of the cable plant is intact and the ranging abort message is a forced signal sent to the cable modem from the CMTS upon instructions from the provisioning system; wherein a power-on state of the cable modem is maintained during the periodic ranging interruption process and the RF failure process and the self-test performed during initial provisioning is relied on by the cable modem.

2. (original) A method as recited in claim 1 further comprising receiving a first reset command from the provisioning system associated with the cable modem network.

3. (original) A method as recited in claim 2 further comprising receiving the first reset command thereby causing the CMTS to interrupt the periodic ranging between the CMTS and the selected cable modem.

4. (original) A method as recited in claim 3 wherein interrupting the periodic ranging further comprises discontinuing the transmission of a ranging opportunity message to the selected cable modem.
5. (original) A method as recited in claim 3 further comprising sending the first reset command to the selected cable modem in the form of a Simple Network Management Protocol (SNMP) command.
6. (original) A method as recited in claim 1 wherein interrupting the periodic ranging further comprises causing the selected cable modem to bypass a power-on/self-test phase.
7. (original) A method as recited in claim 1 further comprising sending the second configuration file to the cable modem after the selected cable modem resynchronizes with the cable modem network.
8. (original) A method as recited in claim 1 further comprising receiving a second reset command from a provisioning system associated with the selected cable modem network.
9. (original) A method as recited in claim 8 further comprising receiving the second reset command thereby causing the CMTS to interrupt the periodic ranging between the CMTS and the selected cable modem.
10. (original) A method as recited in claim 9 wherein interrupting the periodic ranging further comprises sending a ranging abort message to the selected cable modem.
11. (original) A method as recited in claim 10 further comprising replacing a ranging response message with the ranging abort message during the periodic ranging wherein the ranging abort message causes a radio frequency (RF) failure in the selected cable modem.
12. (original) A method as recited in claim 11 further comprising resynchronizing the selected cable modem with the cable modem network immediately upon the selected cable modem receiving the ranging abort message.

13. (original) A method as recited in claim 1 wherein the second configuration file contains data to be used to re-provision the selected cable modem.
14. (original) A method as recited in claim 1 wherein the selected cable modem is a DOCSIS-compliant modem.
15. – 20. (cancelled)
21. (previously cancelled)
22. (withdrawn) In a cable modem termination system (CMTS), a method of re-provisioning a cable modem in a cable modem network, the method comprising:  
performing initial provisioning of the cable modem at which time the cable modem is provisioned;  
performing periodic ranging with the cable modem; and  
breaking the periodic ranging by transmitting a ranging abort message to the cable modem thereby forcing the cable modem to repeat initial provisioning.
23. (withdrawn) A method as recited in claim 22 further comprising re-synchronizing the cable modem with the cable modem network after the periodic ranging is broken.
24. (withdrawn) A method as recited in claim 22 further comprising sending the cable modem a first configuration file when performing initial provisioning and sending the cable modem a second configuration file when the cable modem repeats initial provisioning.
25. (withdrawn) A method as recited in claim 22 further comprising repeating initial provisioning of the cable modem directly after the cable modem receives the ranging abort message.
26. (withdrawn) A method as recited in claim 22 further comprising causing the cable modem to bypass a hardboot when the cable modem repeats initial provisioning.

27. (withdrawn) A method as recited in claim 22 wherein breaking the periodic ranging further comprises receiving a reset command via Simple Network Management Protocol (SNMP) from a provisioning system.

28. (withdrawn) A method as recited in claim 27 wherein the CMTS affects the cable modem at a Media Access Control (MAC)/physical layer of the cable modem network.

29. (Currently Amended) A computer-readable medium containing programmed instructions arranged to change the provisioning status of a selected cable modem in a cable modem network having a cable modem termination system (CMTS) and a provisioning system, the computer-readable medium including programmed instructions for:

transmitting a first configuration file to the selected cable modem thereby allowing the selected cable modem to initially provision and perform a self-test;

performing periodic ranging between the selected modem and the CMTS operating in a primary hub of a cable television plant; and

causing a change in provisioning status of the selected cable modem by performing one of:

i) deliberately interrupting the periodic ranging at the MAC/physical layer of the cable modem network by the CMTS receiving a clear modem reset command directly from the provisioning system located at a network management station and the CMTS causing a disruption in the periodic ranging with the selected cable modem, thereby causing the selected cable modem to return to a synchronization process with the cable modem network and causing the selected cable modem to receive a second configuration file; and

ii) transmitting a ranging abort message to the selected cable modem thereby deliberately causing the cable modem to have an RF failure, wherein the RF state of the cable plant is intact and the ranging abort message is a forced signal sent to the cable modem from the CMTS upon instructions from the provisioning system; wherein a power-on state of the cable modem is maintained during the periodic ranging interruption process and the RF failure process and the self-test performed during initial provisioning is relied on by the cable modem.

30. (original) A computer-readable medium as recited in claim 29 further comprising programmed instructions for receiving a first reset command from a provisioning system associated with the cable modem network.

31. (original) A computer-readable medium as recited in claim 30 further comprising programmed instructions for receiving the first reset command thereby causing the CMTS to interrupt the periodic ranging between the CMTS and the selected cable modem.

32. (original) A computer-readable medium as recited in claim 31 wherein the programmed instructions for interrupting the periodic ranging further comprises programmed instructions for discontinuing the transmission of a ranging opportunity message to the selected cable modem.

33. (original) A computer-readable medium as recited in claim 31 wherein the programmed instructions for interrupting the periodic ranging further comprises programmed instructions for sending a ranging abort message to the selected cable modem.

34. (Cancelled)

35. (withdrawn) A computer-readable medium containing programmed instructions arranged to re-provision a cable modem in a cable modem network, the computer-readable medium including programmed instructions for:

performing initial provisioning of the cable modem at which time the cable modem is provisioned;

performing periodic ranging with the cable modem; and

breaking the periodic ranging by transmitting a ranging abort message to the cable modem thereby forcing the cable modem to repeat initial provisioning.

36. (Currently Amended) A cable modem termination system (CMTS) capable of changing the provisioning status of a selected cable modem in a cable modem network having a provisioning system, the system comprising:

a processor; and  
a computer-readable medium storing a program for execution by the processor, the program comprising  
computer code that transmits a first configuration file to the selected cable modem thereby allowing the selected cable modem to initially provision and perform a self-test;  
computer code that performs periodic ranging between the selected modem and the CMTS operating in a primary hub of a cable television plant; and  
computer code that causes a change in provisioning status of the selected cable modem by performing one of:

- i) deliberately interrupting the periodic ranging at the MAC/physical layer of the cable modem network by the CMTS receiving a clear modem reset command directly from the provisioning system located at a network management station and the CMTS causing a disruption in the periodic ranging with the selected cable modem, thereby causing the selected cable modem to return to a synchronization process with the cable modem network and causing the selected cable modem to receive a second configuration file; and
- ii) transmitting a ranging abort message to the selected cable modem thereby deliberately causing the cable modem to have an RF failure, wherein the RF state of the cable plant is intact and the ranging abort message is a forced signal sent to the cable modem from the CMTS upon instructions from the provisioning system; wherein a power-on state of the cable modem is maintained during the periodic ranging interruption process and the RF failure process and the self-test performed during initial provisioning is relied on by the cable modem.

37. (Currently Amended) A cable modem termination system (CMTS) capable of changing the provisioning status of a selected cable modem in a cable modem network having a provisioning system, the CMTS comprising:

a means for transmitting a first configuration file to the selected cable modem thereby allowing the selected cable modem to initially provision and perform a self-test;

a means for performing periodic ranging between the selected modem and the CMTS operating in a primary hub of a cable television plant; and

means for causing a change in provisioning status of the selected cable modem by performing one of:

i) deliberately interrupting the periodic ranging at the MAC/physical layer of the cable modem network by the CMTS receiving a clear modem reset command directly from the provisioning system ~~located at a network management station~~ and the CMTS causing a disruption in the periodic ranging with the selected cable modem, thereby causing the selected cable modem to return to a synchronization process with the cable modem network and causing the selected cable modem to receive a second configuration file; and

ii) transmitting a ranging abort message to the selected cable modem thereby deliberately causing the cable modem to have an RF failure, wherein the RF state of the cable plant is intact and the ranging abort message is a forced signal sent to the cable modem from the CMTS upon instructions from the provisioning system;  
wherein a power-on state of the cable modem is maintained during the periodic ranging interruption process and the RF failure process and the self-test performed during initial provisioning is relied on by the cable modem.

38. (original) A CMTS as recited in claim 37 further comprising a means for receiving a first reset command from the provisioning system associated with the cable modem network.

39. (original) A CMTS as recited in claim 38 further comprising a means for receiving the first reset command thereby causing the CMTS to interrupt the periodic ranging between the CMTS and the selected cable modem.



40. (original) A CMTS as recited in claim 39 wherein interrupting the periodic ranging further comprises discontinuing the transmission of a ranging opportunity message to the selected cable modem.
41. (original) A CMTS as recited in claim 39 further comprising a means for sending the first reset command to the selected cable modem in the form of a Simple Network Management Protocol (SNMP) command.
42. (original) A CMTS as recited in claim 37 further comprising a means for sending the second configuration file to the cable modem after the selected cable modem resynchronizes with the cable modem network.
43. (original) A CMTS as recited in claim 37 further comprising a means for receiving a second reset command from a provisioning system associated with the selected cable modem network.
44. (original) A CMTS as recited in claim 43 further comprising a means for receiving the second reset command thereby interrupting the periodic ranging between the CMTS and the selected cable modem.
45. (original) A CMTS as recited in claim 44 wherein means for interrupting the periodic ranging further comprises a means for sending a ranging abort message to the selected cable modem.
46. (original) A CMTS as recited in claim 45 further comprising a means for replacing a ranging response message with the ranging abort message during the periodic ranging wherein the ranging abort message causes a radio frequency (RF) failure in the selected cable modem.
47. (cancelled)

48. (withdrawn) A cable modem termination system (CMTS) capable of re-provisioning a cable modem in a cable modem network, the CMTS comprising:
- a means for performing initial provisioning of the cable modem at which time the cable modem is provisioned;
  - a means for performing periodic ranging with the cable modem; and
  - a means for breaking the periodic ranging by transmitting a ranging abort message to the cable modem thereby forcing the cable modem to repeat initial provisioning.